



An Energy Efficiency Workshop & Exposition

Kansas City, Missouri

Load Management

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Load Management

Goal

Goal

- o Help develop a load management strategy to control energy usage and peak electrical demand

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- Help develop a load management strategy to control energy usage and peak electrical demand
- Present methods and ideas of a successful load management strategy



Load Management

What is load management?



Load Management

What is load management?

Energy management process that employs diverse strategies to control energy cost and consumption



Load Management

Why use load management?



Load Management

Why use load management?

- Helps make your facility more cost effective by:



Load Management

Why use load management?

- Helps make your facility more cost effective by:
 - Controlling overall energy consumption



Load Management

Why use load management?

- Helps make your facility more cost effective by:
 - Controlling overall energy consumption
 - Controlling peak demand energy level



Load Management

What's needed?



Load Management

What's needed?

- Monitor the power utility kilowatt-hour meter



What's needed?

- Monitor the power utility kilowatt-hour meter
- Facility Management System (FMS) with energy management functions



Load Management

FMS Energy Management Features:

- **Optimal Start**
- **Demand Limiting**
- **Load Rolling**

Optimal Start

Control feature that:

- Reduces energy during transition from unoccupied/occupied
- Uses schedules, setpoints and temperature sensors (outdoor, space, mass)
- Determines the optimal time to start equipment and meet occupied space conditions

Demand Limiting

Control feature that:

- Monitors power consumption over a sliding interval
- Projects average power demand for each interval
- Compares projected power demand for the interval to a user-defined target
- Selectively sheds loads (turns off equipment)

Load Rolling

Control feature that:

- **Sets a specific energy reduction goal**
- **Selectively sheds loads (expendable) to meet the reduction goal**
- **Works in conjunction with demand limiting**



Load Management

Shedding Loads



Load Management

Shedding Loads

Start/stop control for loads connected to the FMS



Load Management

Shedding Loads

Start/stop control for loads connected to the FMS

Radio (FM) switches for equipment not connected to FMS







Load Management



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Load Management

Other Load Management Strategies:



Load Management

Other Load Management Strategies:

- o Ice Storage









Load Management

Other Load Management Strategies:

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Other Load Management Strategies:

- o Ice Storage
- o Peak Shaving Generators



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Load Management

Other Load Management Strategies:

- o Ice Storage
- o Peak Shaving Generators
- o Geothermal Heat Pumps



Load Management

Other Load Management Strategies:

- Ice Storage
- Peak Shaving Generators
- Geothermal Heat Pumps
- Natural Gas Chillers



Load Management

Conclusion

When you control your electric and gas utilities you can:



Load Management

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When you control your electric and gas utilities you can:

- < Better predict usage



Load Management

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When you control your electric and gas utilities you can:

- < Better predict usage**
- < Better plan & budget**



Load Management

Conclusion:

When you control your electric and gas utilities you can:

- < Better predict usage
- < Better plan & budget
- < Strengthen your bargaining positioning